Regulatory Issues Related to DDGS
State of TX Viewpoint

Dr. Susie Dai

Office of the Texas State Chemist

Department of Veterinary Pathobiology

Texas A&M University

May 14th 2014

OFFICE OF THE TEXAS STATE CHEMIST

TEXAS A&M AGRILIFE RESEARCH

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OTSC Testimony – April 2014:
Testimony before the Texas Homeland Security and Public Safety Committee

Protecting consumers and enhancing agribusiness through its feed and fertilizer regulatory compliance program, surveillance and monitoring of animal-human health and environmental hazards, and preparedness planning.

Office of the Texas State Chemist

FDA Recall Notices & Alerts

Date	Product Type	Short Description
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What's new

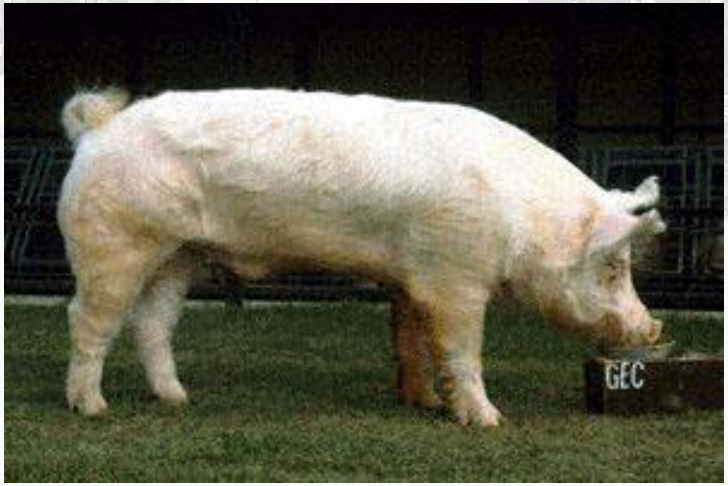
- Now Hiring-Feed & Fertilizer Inspector
- Ammonium Nitrate
- Feb 2014 OTSC Newsletter
- Regulatory Science in Food Systems Graduate Certificate
- Feed Industry HACCP Website
- One Sample Strategy Website
- Testing on Private Samples (3-17-14)

Outline

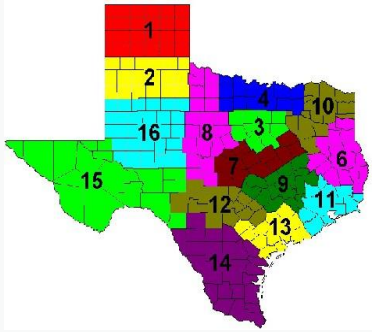
- **Who are we**
- **Plan of Work at OTSC**
- **DDGS Analysis**
- **Industry**

Where do We Receive the Authority

- Texas Commercial Feed Control Act
- Texas Agricultural Code
  Chapter 141

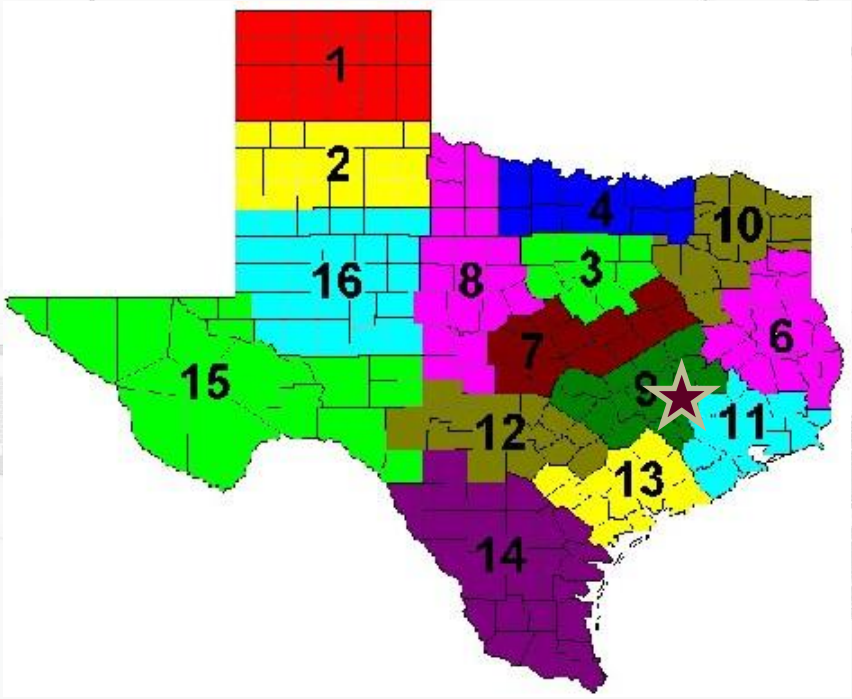


- Agricultural Analytical Service
  - Three teams
- Feed and Fertilizer Control Service
  - Field investigators
  - Registration
  - Compliance

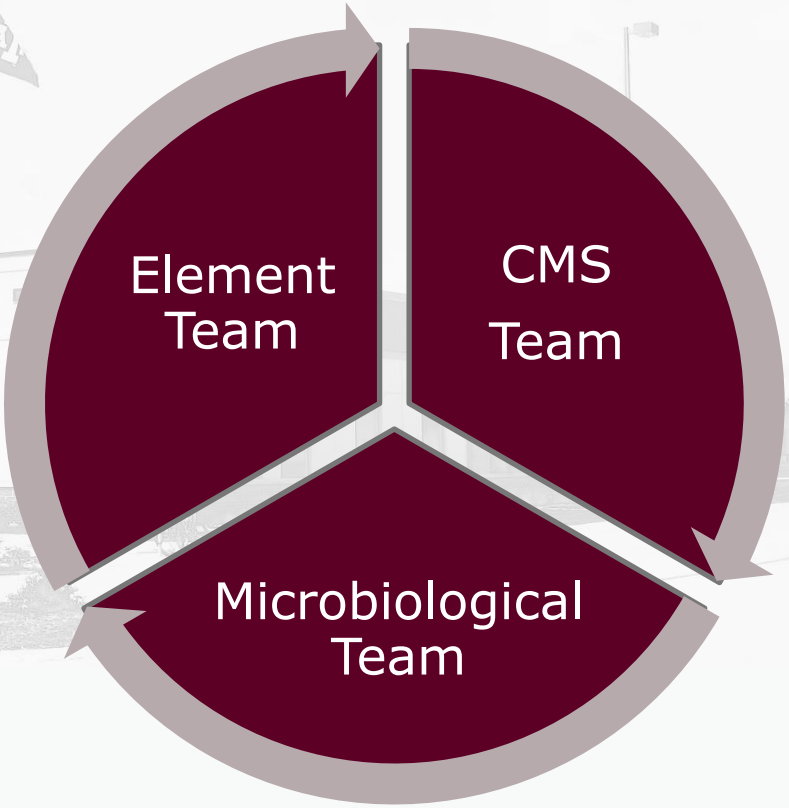


Structure

Feed and Fertilizer Control Service



Agricultural Analytical Service



Laboratory Analysis

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Office of the Texas State Chemist
445 Agronomy Road, College Station, TX 77843

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2005

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

Chemical Testing – Animal feed (in corn and corn products)
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

Efficiency

Network

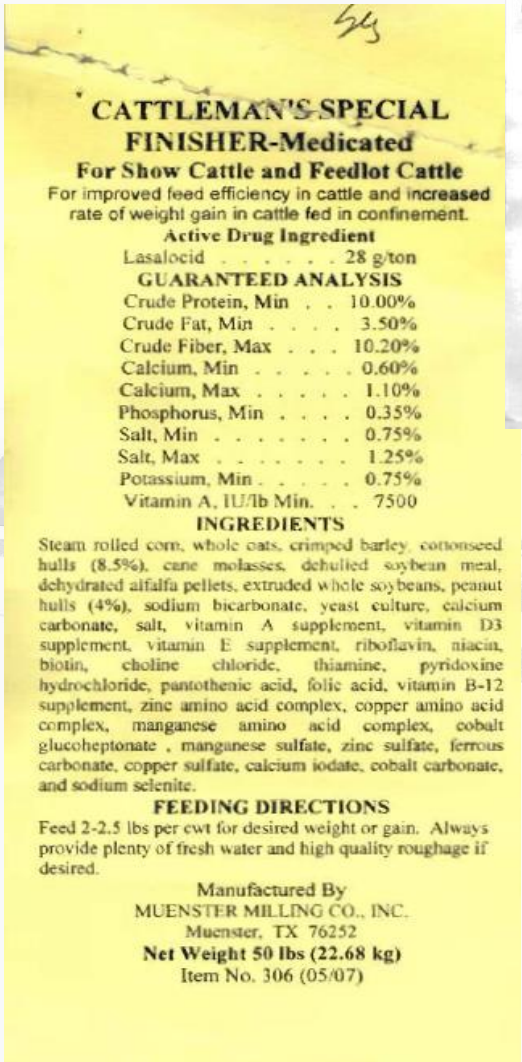
Collaboration

Deliverables

How do We Protect Customers?

- Truth in Labeling
  - Type of Product and how it is to be used.
  - Guaranteed Nutritional Qualities
  - Listing of Ingredients (Components that make up the product)
  - Proper Weight as guaranteed.

Cattle Feed Label



CATTLEMAN'S SPECIAL
FINISHER-Medicated
For Show Cattle and Feedlot Cattle
For improved feed efficiency in cattle and increased rate of weight gain in cattle fed in confinement.

Active Drug Ingredient
Lasalocid . . . . . 28 g/ton

GUARANTEED ANALYSIS

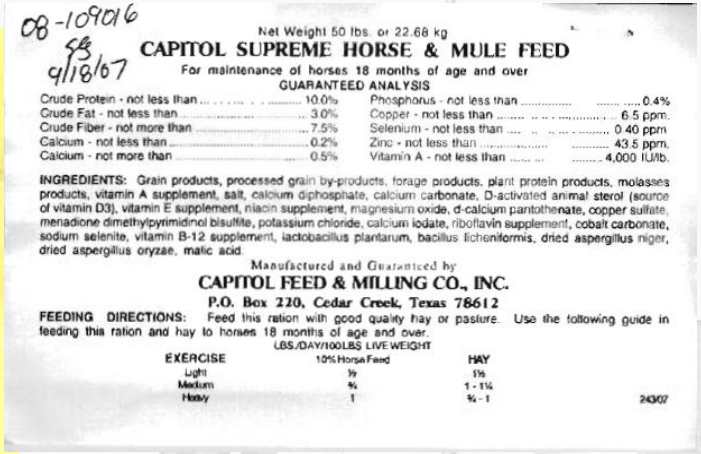
Crude Protein, Min	10.00%
Crude Fat, Min	3.50%
Crude Fiber, Max	10.20%
Calcium, Min	0.60%
Calcium, Max	1.10%
Phosphorus, Min	0.35%
Salt, Min	0.75%
Salt, Max	1.25%
Potassium, Min	0.75%
Vitamin A, IU/lb Min.	7500

INGREDIENTS
Steam rolled corn, whole oats, crimped barley, cottonseed hulls (8.5%), cane molasses, dehulled soybean meal, dehydrated alfalfa pellets, extruded whole soybeans, peanut hulls (4%), sodium bicarbonate, yeast culture, calcium carbonate, salt, vitamin A supplement, vitamin D3 supplement, vitamin E supplement, riboflavin, niacin, biotin, choline chloride, thiamine, pyridoxine hydrochloride, pantothenic acid, folic acid, vitamin B-12 supplement, zinc amino acid complex, copper amino acid complex, manganese amino acid complex, cobalt glucoheptonate , manganese sulfate, zinc sulfate, ferrous carbonate, copper sulfate, calcium iodate, cobalt carbonate, and sodium selenite.

FEEDING DIRECTIONS
Feed 2-2.5 lbs per cwt for desired weight or gain. Always provide plenty of fresh water and high quality roughage if desired.

Manufactured By
MUENSTER MILLING CO., INC.
Muenster, TX 76252
Net Weight 50 lbs (22.68 kg)
Item No. 306 (05/07)

Horse Feed Label



08-109016
SG
4/18/07

Net Weight 50 lbs. or 22.68 kg
CAPITOL SUPREME HORSE & MULE FEED
For maintenance of horses 18 months of age and over

GUARANTEED ANALYSIS

Crude Protein - not less than	10.0%	Phosphorus - not less than	0.4%
Crude Fat - not less than	3.0%	Copper - not less than	6.5 ppm.
Crude Fiber - not more than	7.5%	Selenium - not less than	0.40 ppm
Calcium - not less than	0.2%	Zinc - not less than	43.5 ppm.
Calcium - not more than	0.5%	Vitamin A - not less than	4,000 IU/lb.

INGREDIENTS: Grain products, processed grain by-products, forage products, plant protein products, molasses products, vitamin A supplement, salt, calcium diphosphate, calcium carbonate, D-activated animal sterol (source of vitamin D3), vitamin E supplement, niacin supplement, magnesium oxide, d-calcium pantothenate, copper sulfate, menadione dimethylpyrimidinol bisulfite, potassium chloride, calcium iodate, riboflavin supplement, cobalt carbonate, sodium selenite, vitamin B-12 supplement, lactobacillus plantarum, bacillus licheniformis, dried aspergillus niger, dried aspergillus oryzae, malic acid.

Manufactured and Guaranteed by
CAPITOL FEED & MILLING CO., INC.
P.O. Box 220, Cedar Creek, Texas 78612

FEEDING DIRECTIONS: Feed this ration with good quality hay or pasture. Use the following guide in feeding this ration and hay to horses 18 months of age and over.

LBS./DAY/100LBS LIVE WEIGHT

EXERCISE	10% Horse Feed	HAY
Light	½	1½
Medium	¾	1 - 1¼
Heavy	1	¾ - 1

24307

Small Animal Label

Sample Chain of Custody

Office of the Texas State Chemist, Texas Agricultural Experiment Station, Texas A&M University System

Texas Commercial Feed Control Act

Texas Agriculture Code Chapter 141

Official Sample

Official Feed Seal Placed on Sample

Information Entered

Sample Shipped

Sample Received

Sample Information Stored

Sample Prepared for Analysis

Analytical Results to FFCS

Reports Mailed to Manufacturer

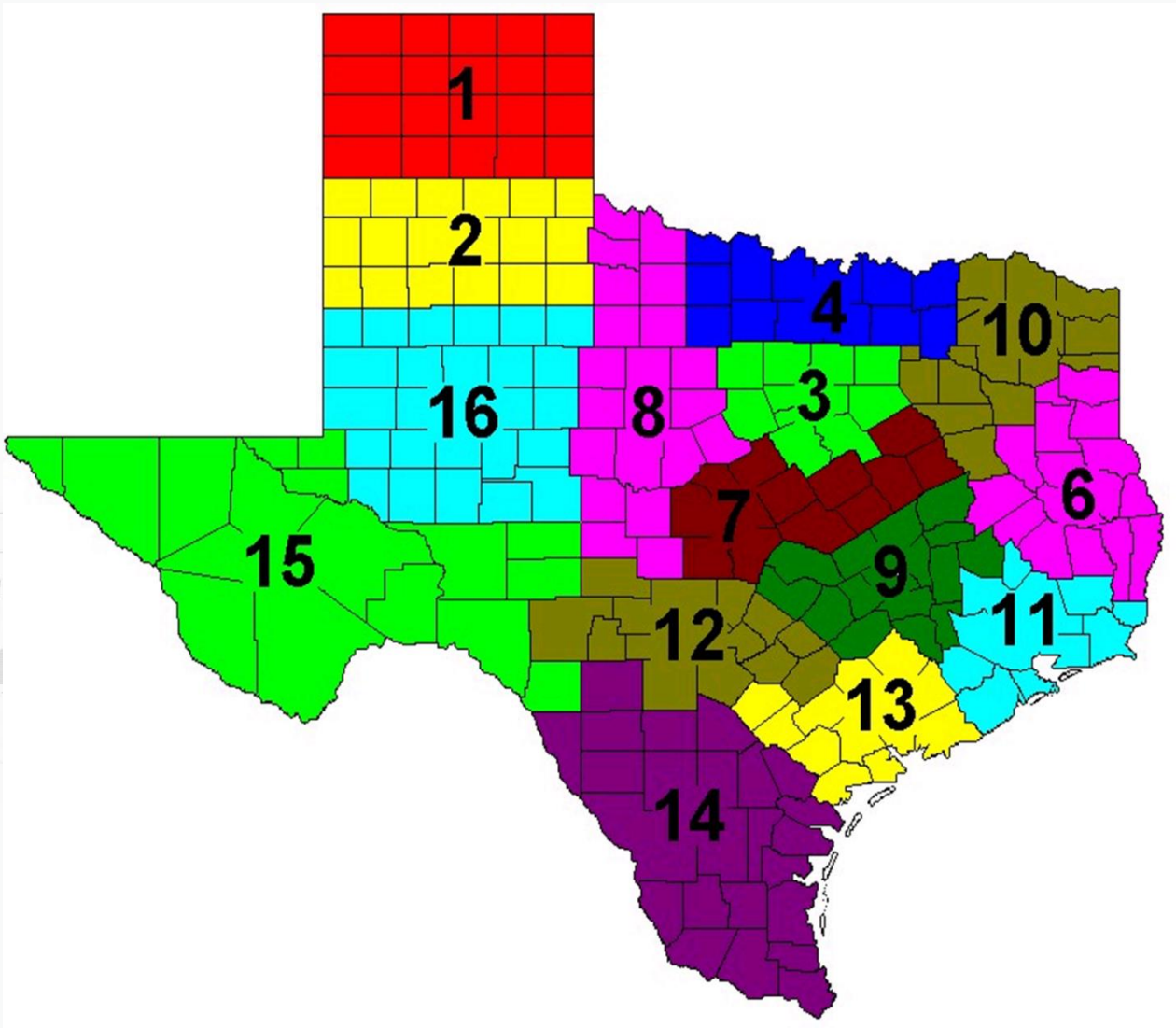
Each analytical result must be surrounded by sample integrity. Without proof of the sample chain of custody, an analytical result is just a number.

Outline

- **Who are we**
- **Plan of Work at OTSC: Risk based**
- **DDGS Analysis**
- **Industry**

Texas State Chemist Method

- Sample Driven approach
  - Targets coverage of all establishments in TX
  - Directs inspections based on violation history
- Risk Based approach
  - Probability of contamination
  - Sampling plan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Available online at www.sciencedirect.com
ScienceDirect
Food Control 20 (2009) 17–26
FOOD CONTROL
www.elsevier.com/locate/foodcont

Application of multivariate statistics in a risk-based approach to regulatory compliance

K.M. Lee, T.J. Herrman*, B. Jones

Office of the Texas State Chemist, Texas Agricultural Experiment Station, Texas A&M System, College Station, TX 77841, USA

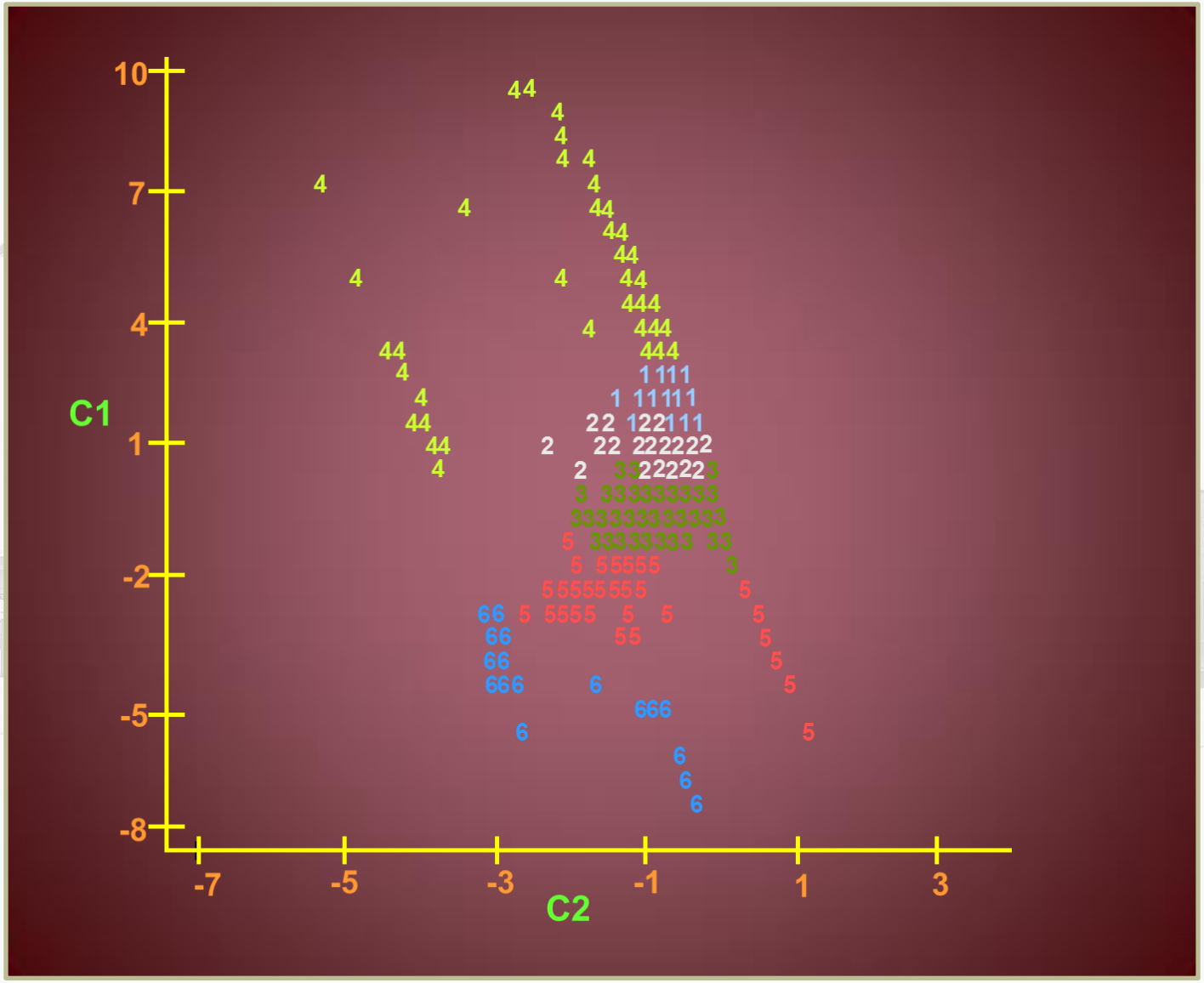
Received 1 October 2007; received in revised form 18 January 2008; accepted 25 January 2008

Abstract

The application of risk analysis as a method to ensure food safety presents significant challenges to the regulatory community, including developing sampling and regulatory scheme based on historical data that focuses attention on firms with poor compliance records. This study examines the application of multivariate statistical analysis including principle component analysis, cluster analysis, and discriminant analysis to characterize Texas feed and fertilizer firms' ability to manufacture nutritionally uniform products. Multivariate statistical results from a three year continuous data set and three variables were used to develop a sampling plan in which the best performing feed and fertilizer manufacturers were sampled at the lowest sampling percentage of the facilities. Sampling was optimized within each group to achieve the target number of total samples for the 2007 plan of work for the Office of the Texas State Chemist.

Three Variables for Compliance Analysis

- Guarantee deviation: Difference between the label guarantee and OTSC analytical results
- Non-violation rate: “Good” samples out of total samples
- Relative percent rank: Cross comparison of the single firm to all listed firms based on guarantee deviation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C2

Outline

- **Who are we**
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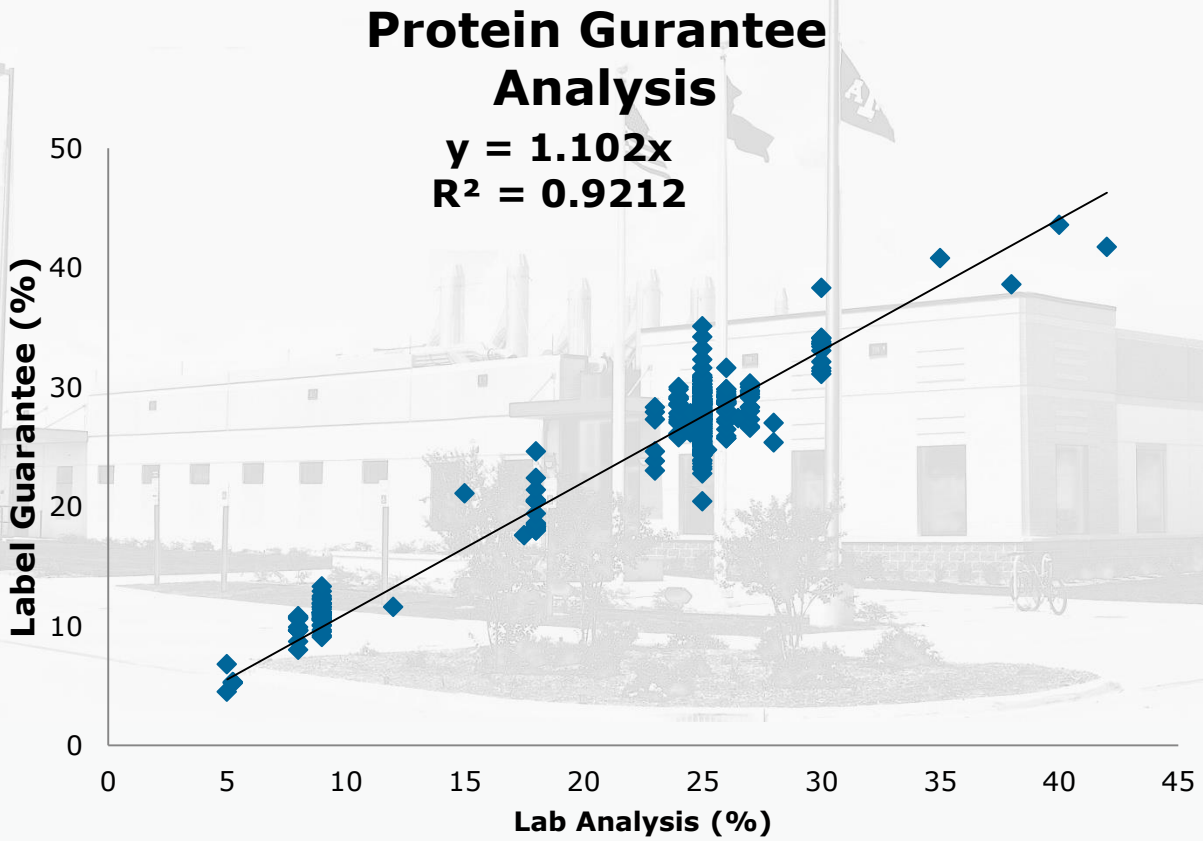
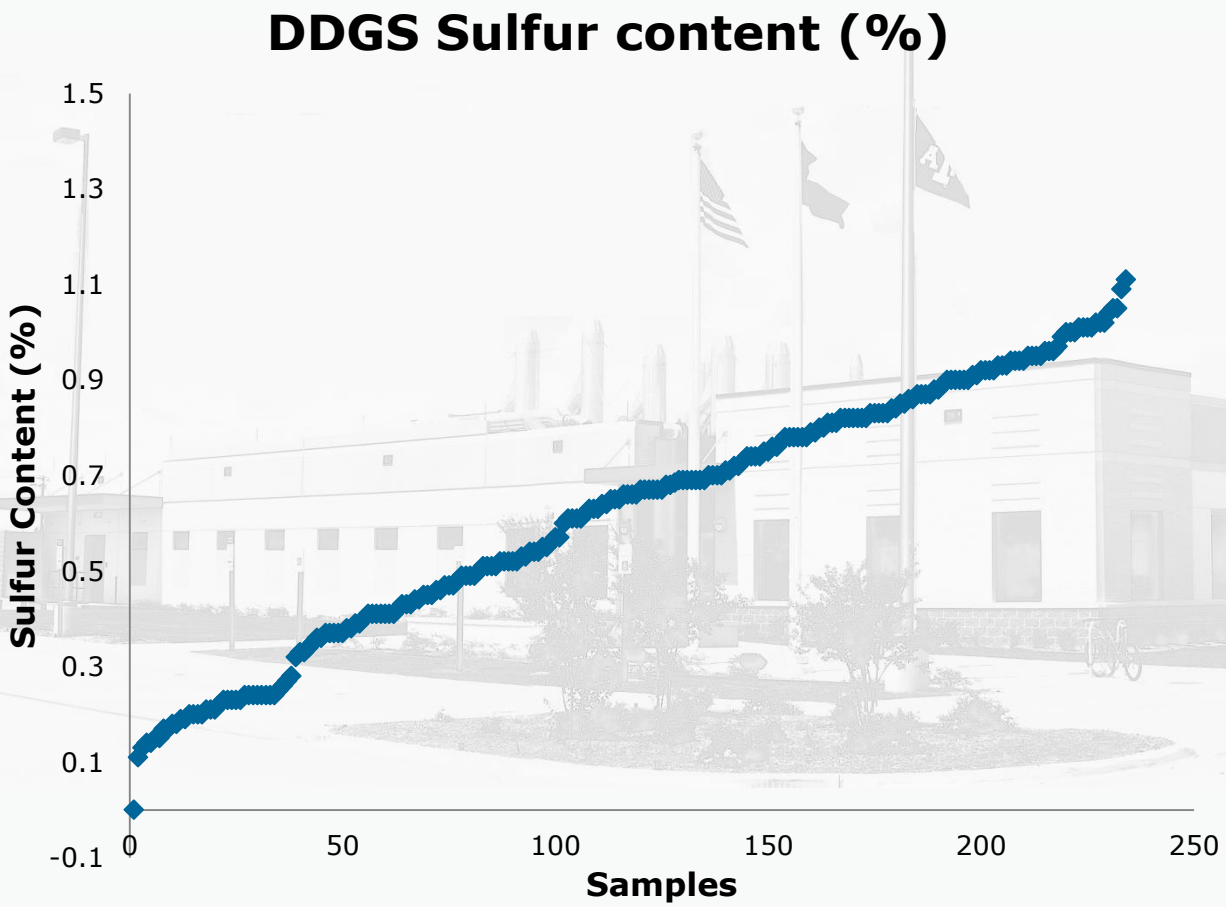
DDGS Analysis

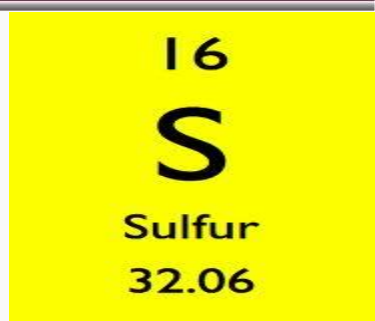
- Protein
- Element: Sulfur
- Antibiotics: Virginiamycin
- Microbiological: Salmonenlla
- Mycotoxin: aflatoxin and Fumonisin
- Prohibited protein: BSE

Protein Guarantee



Sulfur


DDGS Sulfur content (%)
Sulfur Content (%)
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1
-0.1
0
50
100
150
200
250
Samples


16
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Sulfur
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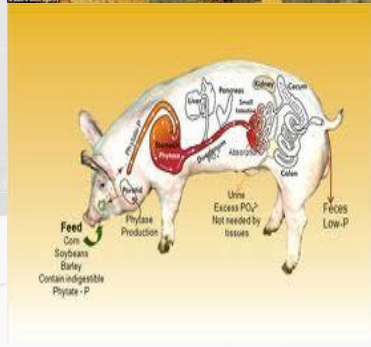

Feed
Corn
Soybeans
Barley
Contain indigestible Phytate - P
Phytase Production
Urine
Excess PO4-3 Not needed by tissues
Feces
Low-P

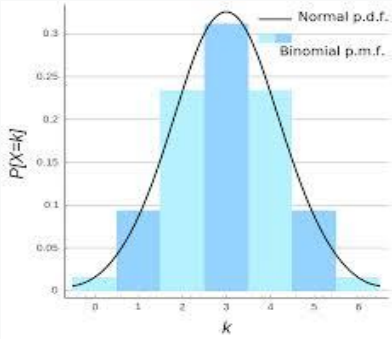

Are You
Feeding me
Poison??

Other Contaminations

Analytes	Sample Numbers	Results
Virginiamycin	242	26 detected but less than 0.25 ppm
Salmonella	158	4 positives
Aflatoxin	156	7 > 20 ppb
Fumonisin	35	1 = 5 ppm
BSE	167	1 sample shows Bovine DNA

Sampling Approach OTSC is taking

- Binomial Distribution: Contamination: Yes or No; Detected or Non detected
- Probability based approach: Use of contamination rate (probability of contamination) to determine how many samples we need to collect to find that contamination.
- The probability of contamination in DDGS is low based on our historical analysis results.



Conclusions

- Majority of DDGs samples are free of contaminations and conform to regulatory requirements.

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TX Agriculture and Livestock

Major Agriculture & Livestock Production in Texas (2011)

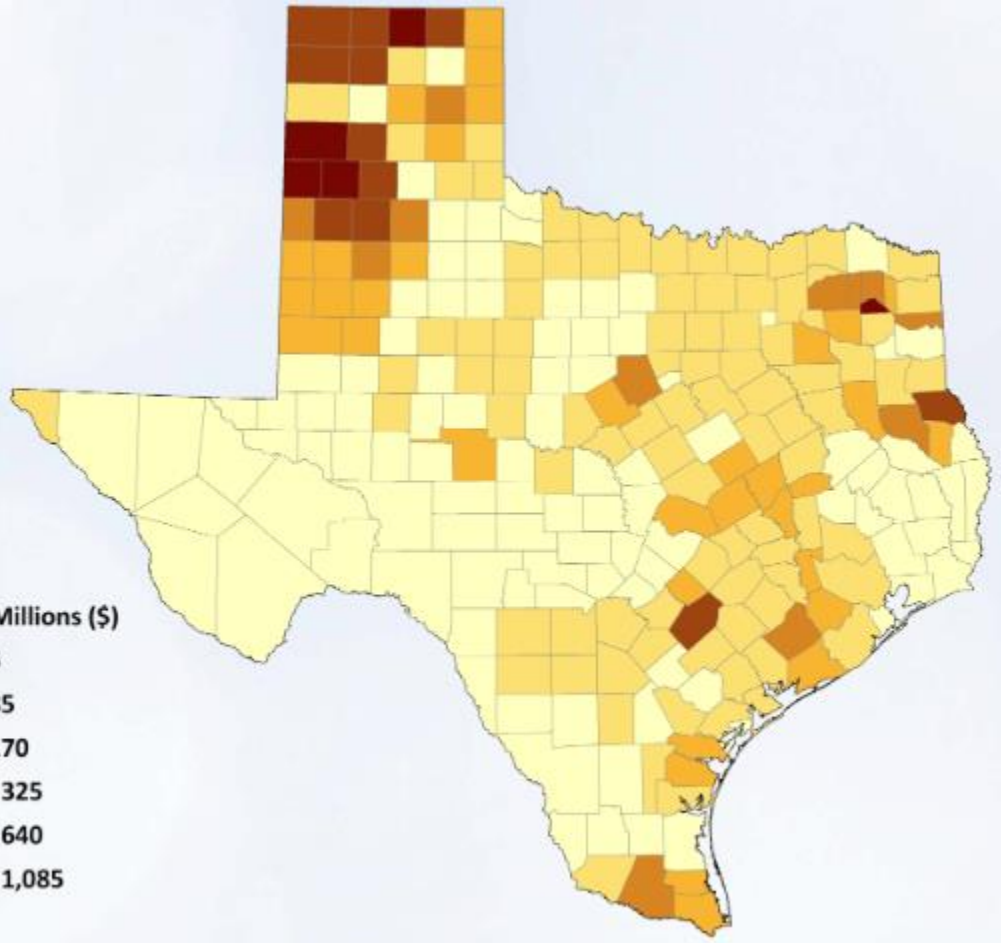
Product	Value of Production	Primary Location(s)	State Ranking
Cattle & Calves	$11.2 billion	High Plains, North, Central	No. 1
Cotton	$2.3 billion	High Plains, Gulf Coast, Rio Grande Valley	No. 1
Poultry & Eggs	$2.2 billion	Northeast, East, Central	No. 6
Wheat	$428 million	High Plains	No. 12
Milk & dairy products	$2.0 billion	High Plains, Northeast, Central	No. 6
Sorghum	$344 million	High Plains, Gulf Coast, Rio Grande Valley	No. 2

www.governor.state.tx

TX Agriculture and Livestock

Regional Concentrations

The map at right identifies the Texas counties with the highest agricultural output per square mile, including both crop and livestock production. Crop and livestock activities take place across the state, but the highest concentration of production is located in the panhandle. Agricultural concentrations also exist in the Rio Grande Valley, the Gulf Coast, Central Texas, and East Texas.

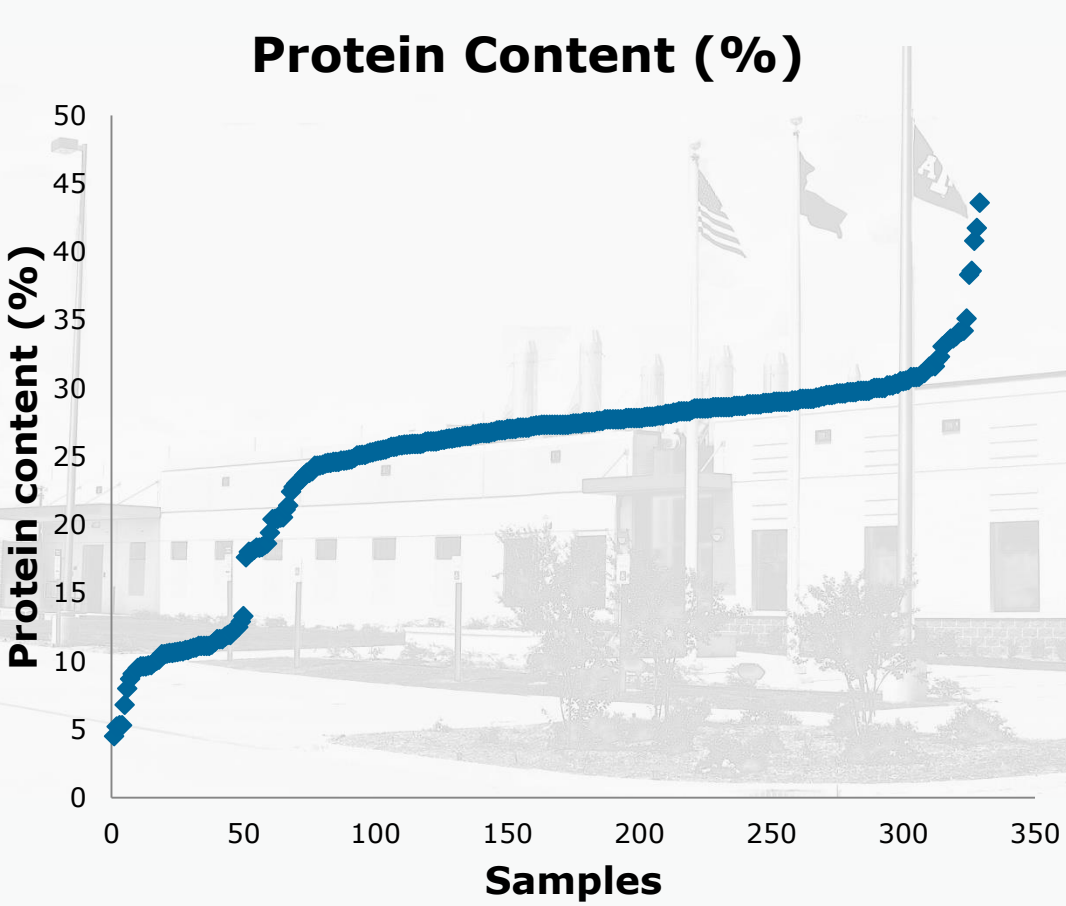


Recent Industry Trends

- TX leads the country in the production of cattle, cotton, sheep and goats.
- Beef Cattle Production:
  - Each year, over 5 million calves are born on over 130,000 cow-calf operations in Texas.
- **Truth:**
  - TX is a corn deficient state. 77% of the corn are imported.

www.beagsnart.org

DDGS: a Viable Option for Feed



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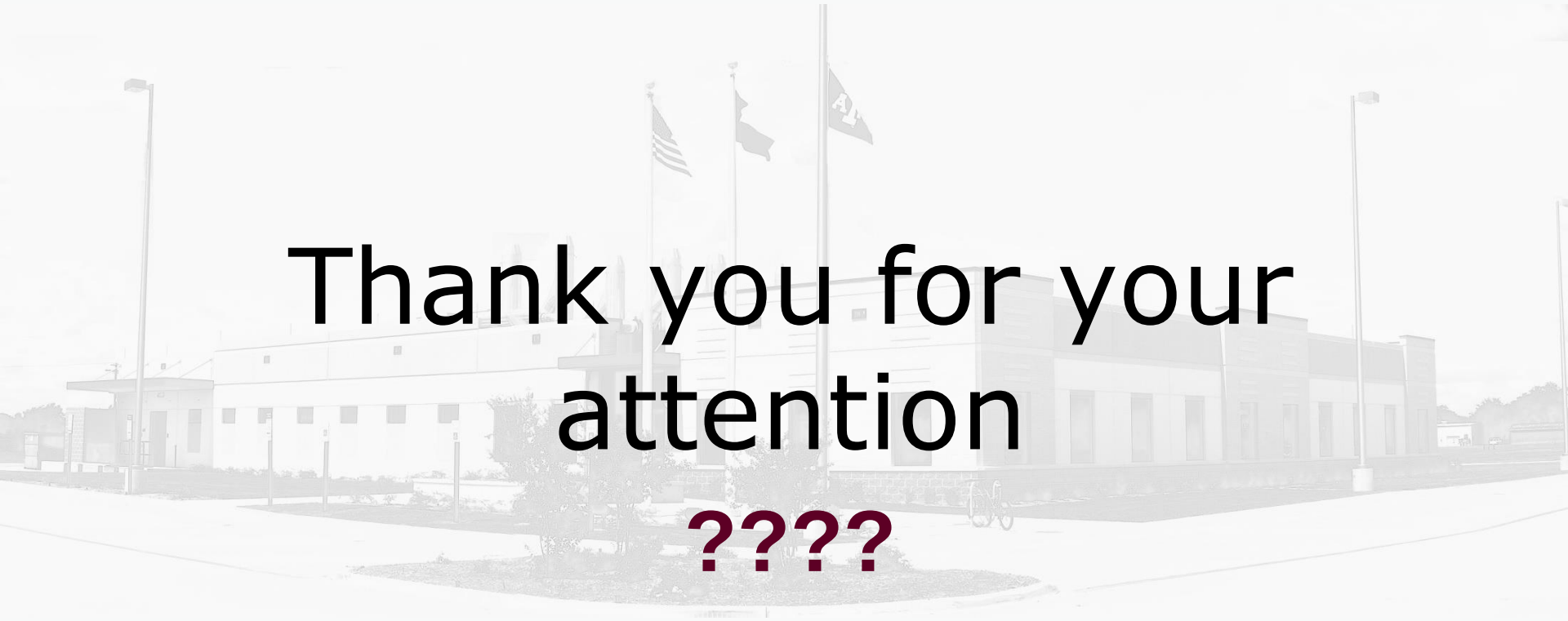

Thank you for your attention

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